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Postsecondary Faculty**

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Institute of Education Sciences
NCES 2002-170

Gender and Racial/ Ethnic Differences in Salary and Other Characteristics of Postsecondary Faculty: Fall 1998

Statistical Analysis Report

Executive Summary

The complete report is available at
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Executive Summary

Disparities in salary, rank, and tenure among faculty members have been an interest of leaders and policymakers both inside and outside academe. Researchers have consistently found that faculty characteristics such as experience, research productivity, institution type, and teaching field relate to faculty pay and outcomes (Fairweather 1995; Bellas 1997; Bellas and Toutkoushian 1999). Differences by gender and race/ethnicity are also evident, with relatively few women and minority faculty teaching at doctoral institutions and holding tenure and the highest ranking positions (Jusenius and Scheffler 1981; Alpert 1989; Smart 1991; Ashraf 1996; Nettles, Perna, and Bradburn 2000). Additionally, wage gaps between male and female faculty remain after controlling for numerous sociodemographic, human capital, productivity, and employment characteristics (Barbezat 1991; Glazer-Raymo 1999; Nettles, Perna, and Bradburn 2000). These gender and racial/ethnic equity issues are important to individuals currently working within the professoriate and to those who hope to attract a diverse pool of talent to the profession in the future (American Association of University Professors 1999).

Using data from the 1999 National Study of Postsecondary Faculty (NSOPF:99), this report examines how gender and race/ethnicity relate to a number of faculty outcomes and characteristics, including the following: salary, rank, tenure status, education, experience, institution type, teaching field, workload, and research productivity. The report focuses on full-time faculty and staff who

had instructional duties for credit in fall 1998,¹ comparing men and women as well as members of four racial/ethnic groups: White, non-Hispanic; Black, non-Hispanic; Asian/Pacific Islander; and Hispanic. It also includes a regression analysis that shows the residual relationship of gender and race/ethnicity to salary after taking into account other faculty characteristics. As a follow-up to the report *Salary, Promotion, and Tenure Status of Minority and Women Faculty in U.S. Colleges and Universities* (Nettles, Perna, and Bradburn 2000), which used data from the 1993 National Study of Postsecondary Faculty (NSOPF:93), the current report also examines changes in faculty outcomes and characteristics between 1992 and 1998.

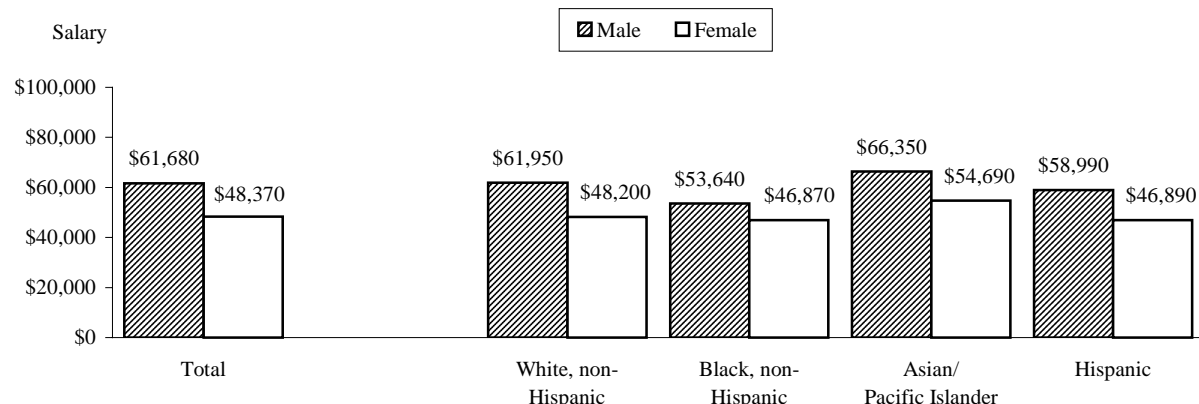
Differences Between Male and Female Faculty Members

Overall, men's salaries were higher than women's salaries: full-time male faculty averaged about \$61,700 in base salary from the institution in 1998, compared with \$48,400 for full-time female faculty (figure A). Furthermore, men's salary advantage was found among White,² Asian, Black, and Hispanic faculty as well. The male-female difference in base salary ranged from about \$7,000

¹Throughout this report, "full-time faculty and staff who had instructional duties for credit" are often referred to simply as "faculty." Included are full-time faculty who had for-credit instructional duties, as well as staff who did not have faculty status, but who did have for-credit instructional duties. Teaching assistants are not included.

²For brevity throughout this report, "White" denotes "White, non-Hispanic," "Black" refers to "Black, non-Hispanic," and "Asian" refers to "Asian/Pacific Islander."

Figure A.—Base salary of full-time instructional faculty and staff at degree-granting institutions, by gender and race/ethnicity: Calendar year 1998



NOTE: Includes full-time instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit. Refers to base salary during calendar year 1998 received from the institution at which the respondent was sampled. Dollar figures are rounded to the nearest 10. Included in total but not shown separately are American Indian/Alaska Native faculty.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999 National Study of Postsecondary Faculty (NSOPF:99).

among Black faculty to about \$14,000³ among White faculty. The regression analysis also showed that, after controlling for race, type of institution, teaching field, level of instruction, tenure status, rank, highest degree, years since highest degree, age, average proportion of time spent on teaching and on research, number of classes taught, and number of total publications or other permanent creative works, full-time female faculty members earned nearly 9 percent⁴ less than their male counterparts.

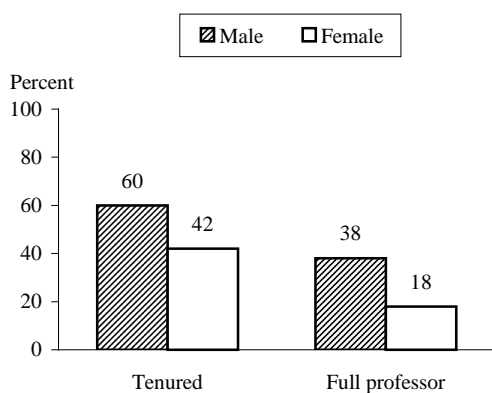
³These salary differences were calculated as follows: \$53,640 (Black male average salary) – \$46,870 (Black female average salary) = \$6,770 (salary difference between Black males and females); \$61,950 (White male average salary) – \$48,200 (White female average salary) = \$13,750 (salary difference between White males and females); \$66,350 (Asian male average salary) – \$54,690 (Asian female average salary) = \$11,660 (salary difference between Asian males and females) and \$58,990 (Hispanic male average salary) – \$46,890 (Hispanic female average salary) = \$12,100 (salary difference between Hispanic males and females).

⁴This percentage difference was calculated using male and female average base salaries that were adjusted to take into account differences associated with other variables in the

Other faculty outcomes and characteristics also differed by gender in fall 1998. Overall, men held higher ranks and were more likely than women to have tenure (figure B). Men were much more likely than women to be full professors, and 60 percent of men had tenure, compared with 42 percent of women. Women were also more likely than men to have jobs that were not on the tenure track. Men's and women's highest degree and years of experience also differed. While about three-quarters (74 percent) of men held doctoral or first-professional degrees, 54 percent of women held these degrees, and women were much more likely than men to have completed their education with a master's degree. Men had also held their highest degrees for longer periods of time, on average, than women and had been teaching longer both in their current jobs and in higher education overall. On the other hand, no

analysis: \$58,690 (adjusted male average salary) – \$53,620 (adjusted female average salary) = \$5,070 (gender salary difference) / \$58,690 = .086 x 100 = 9 percent.

Figure B.—Percentage of full-time instructional faculty and staff at degree-granting institutions who were senior faculty, by gender: Fall 1998



NOTE: Includes full-time instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999 National Study of Postsecondary Faculty (NSOPF:99).

differences were detected between women and men in the number of jobs in higher education during their careers. Since women's careers were shorter, this result suggests more frequent job turnover among women.

Men were more likely than women to be employed at public doctoral institutions, while women were more likely to work at public 2-year colleges. Gender differences in teaching field were evident as well: men were more likely than women to teach in the natural sciences and engineering, while women were more likely to teach in the health sciences or in the social sciences and education.

Teaching and research activities of male and female faculty members also differed. Women spent a greater average proportion of their total work time on activities related to teaching, averaging about 60 percent of their work time on

such activities, compared with about 55 percent for men. Conversely, about 70 percent of men reported that they were engaged in some type of research activity, compared with about 62 percent of women. Men had also produced more scholarly works than women over the previous 2 years.

Because non-Hispanic Whites are the largest racial/ethnic group of faculty, gender differences overall are driven by the differences between White men and White women. Less is known about the extent of gender differences among other racial/ethnic groups. This report found that most of the gender differences among White faculty also existed among Asian faculty, while fewer such differences existed among Black and Hispanic faculty. Yet several differences did emerge. Black women were more likely than Black men to be employed at community colleges. In addition, Black men were more likely to teach in the natural sciences and engineering, while Black women were more likely to teach in the health sciences or social sciences and education. Both Black and Hispanic men were more likely than their female counterparts to hold the most senior positions, and like Asian and White men, Black and Hispanic men tended to have more education than their female counterparts.

Differences Among Racial/Ethnic Groups

Overall, Asian/Pacific Islander faculty salaries were higher than White faculty salaries, which were higher than Black faculty salaries. Full-time White faculty averaged \$57,000 in base salary from their institutions in 1998, compared with \$62,800 for Asian faculty and \$50,400 for Black faculty. No salary difference was found between Hispanic faculty, who earned about \$54,400 on average, and White faculty. After controlling for the other variables in this analysis, no differences

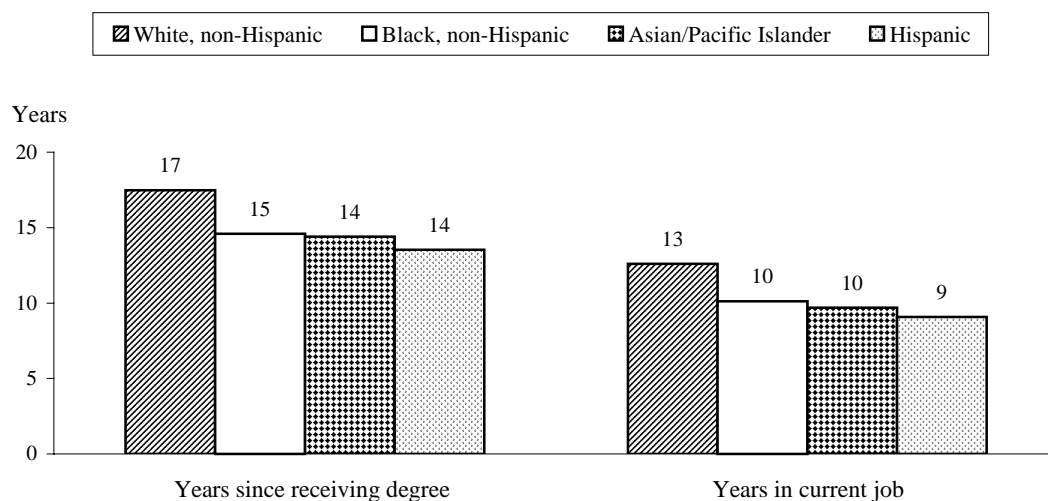
were observed in average salaries across racial/ethnic categories.

The analysis of faculty outcomes and characteristics in fall 1998, which makes racial/ethnic comparisons separately for men and women, shows that racial/ethnic differences were more often found among men than among women. When racial/ethnic differences did emerge, there were more differences between Whites and Asians than between Whites and Blacks. Hispanic faculty displayed the fewest differences from White faculty overall. In some cases, small sample sizes and large standard errors meant that apparent differences were not statistically conclusive.

In general, full-time Asian/Pacific Islander faculty were more likely than full-time White faculty to have several kinds of characteristics that are associated with higher salaries. For example,

they were more likely to work at public doctoral institutions and to teach in the natural sciences and engineering. They also spent a higher average proportion of their time engaged in research, and they produced more recent scholarly works. In contrast, Black faculty were less likely than White faculty to have certain characteristics associated with higher pay. Thus, Black faculty were less likely than White faculty to be full professors or to hold tenure. They were also less likely to work at doctoral institutions and more likely to teach in the social sciences and education. While Asian faculty were more likely than White faculty, who in turn were more likely than Black faculty, to have doctoral or first-professional degrees, White faculty had more experience than faculty belonging to any of the other three racial/ethnic groups (figure C). Compared with Asian, Black, and Hispanic faculty, White faculty had held their highest degrees and their current jobs longer.

Figure C.—Years of experience of full-time instructional faculty and staff at degree-granting institutions by race/ethnicity: Fall 1998



NOTE: Includes full-time instructional faculty and staff at Title IV degree-granting institutions with at least some instructional duties for credit.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999 National Study of Postsecondary Faculty (NSOPF:99).

White faculty were also older than their Asian and Hispanic colleagues.

Other Findings

The multiple regression analysis confirmed that other faculty characteristics besides gender were related to salaries. Tenure status, academic rank, highest degree earned, and number of years since receiving highest degree were all associated with salary. Full professors earned more than associate and assistant professors and faculty in other ranks. Faculty holding doctoral or first-professional degrees earned about 12 percent⁵ more than faculty holding other degrees, and those who held their highest degrees for more than 15 years earned an average of at least \$6,000⁶ more than their colleagues with less experience.

Institution type, teaching field, and teaching and research activities were also associated with salaries. Compared with faculty who taught at public 2-year institutions, faculty who taught at public and private not-for-profit doctoral institutions earned significantly higher salaries after adjusting for the other variables used in the analysis. Faculty who taught in business, law,

communications, and health sciences earned significantly higher salaries than faculty in the natural sciences and engineering. Faculty in the natural sciences and engineering earned more than their counterparts in the humanities. Additionally, faculty who reported producing more than 10 total publications or other permanent creative works over the previous 2 years earned more than their counterparts who had produced fewer works. Salaries were also higher for those faculty members who spent an average of 50 percent or less of their time on teaching activities.

A comparison of results from the 1993 and 1999 administrations of NSOPF also showed that differences among faculty have persisted over time. Overall, the status of faculty across racial/ethnic groups changed little between 1992 and 1998. Women's average salary (in constant 1998 dollars) rose significantly between 1992 and 1998, resulting from an increase in salary among White women in particular. But while salaries among other racial/ethnic groups also appeared to have increased for women (and, in some cases, for men), the standard errors were large, and there was not enough statistical evidence to conclude that these results were significant. In addition to having higher average salaries in 1998 than in 1992, White women were also more likely to have doctoral or first-professional degrees and to be full professors. Despite these changes, no change was detected in the gap between the average salary of White men and women between 1992 and 1998. In fact, no significant changes were detected in the salary gaps between male and female full-time instructional staff between 1992 and 1998 across the four racial/ethnic groups examined.

⁵This percentage difference was calculated using average base salaries by highest degree adjusted to control for differences associated with other variables in the analysis: \$58,980 (adjusted average salary for faculty holding doctoral/first-professional degrees) – \$52,540 (adjusted average salary for faculty holding other degrees) = \$6,440 (salary difference) / \$52,540 = 0.12 x 100 = 12 percent salary difference.

⁶These salary differences were calculated as follows: \$60,690 (adjusted average salary for faculty with more than 15 years of experience) – \$54,280 (adjusted average salary of faculty with 11 to 15 years of experience) = \$6,410 (salary difference); \$60,690 (adjusted average salary for faculty with more than 15 years of experience) – \$53,250 (adjusted average salary of faculty with 6 to 10 years of experience) = \$7,440 (salary difference); and \$60,690 (adjusted average salary for faculty with more than 15 years of experience) – \$50,950 (adjusted average salary of faculty with 0 to 5 years of experience) = \$9,740 (salary difference).